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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,376

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Dieter Bechtold

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EXAMINER

SCULLY, STEVEN M

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

12/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,376	Applicant(s) BECHTOLD ET AL.	
	Examiner Steven Scully	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 20-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

BATTERY HAVING SEALED CONTACT TERMINAL BUSHING

Examiner: Scully S.N.: 10/560,376 Art Unit: 1795 December 1, 2009

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 29, 2009 has been entered. Claims 1 and 20 have been amended. Claims 1-15 and 20-24 remain pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claim rejections with respect to claims 1-15 and 20-24 under 35 U.S.C. 103(a) as being unpatentable over Ovshinsky et al. in view of Schafer and Walsh are withdrawn.

4. Claims 1-11, 14, 15 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ovshinsky et al. (US5,558,950) in view of Schäfer (GB2,026,761)

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and TWI World Centre for Materials Joining Technology, "Laser Welding of Plastics (August 2000); herein referred to as "TWI".

With respect to claim 1, Ovshinsky et al. disclose a metal hydride battery having a plastic housing comprising a plastic case and a plastic top. See Table 2. Ovshinsky et al. further recognize that plastic cases are extensively used in lead acid battery technology and has been easily adapted for other batteries such as NiMH hydride electric vehicle batteries. See column 3, lines 27-33. The battery would obviously have a terminal for the electrodes. See Figure 1.

Ovshinsky et al. do not disclose a plastic sealing element on the contact element. Schäfer discloses a battery having a terminal post (1) provided on the shank with parallel, peripheral ribs (4), and these ribs engage in complementary grooves in portion (5) moulded around it. The ribs (4) provide both firm, positive engagement with the plastics portion (5) on the terminal post (1), and a very long surface leakage path for the electrolyte, which ensures both fluid-tightness and mechanical strength. See page 1, lines 51-58. Further, Schafer discloses the welding neck (6) of the sealing element (5) to directly contact the welding neck (7) of the housing element (2). See Figure 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a plastic sealing element because Schäfer teaches it to ensure both fluid-tightness and mechanical strength. The plastic sealing element would be within the lid of the battery which lies flat against the housing wall at an interface.

Ovshinsky et al. in view of Schäfer do not disclose a battery wherein one of the support surface and the housing wall is at least partially transparent for a laser beam

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and the other is absorbent for the laser beam. However, it is well known to laser weld battery casings. In fact, Schäfer discloses “mirror” welding, and as shown in the table on Page 3 of TWI, the forms of laser welding each use mirrors. TWI discloses three forms of laser welding, CO₂ laser radiation is readily absorbed by plastics, but limits the depth of penetration of the beam, restricting the technique to film applications. See Introduction. Further, the efficiency is less than that of Diode transmission laser welding. See Table on Page 3. Transmission laser welding is capable of welding thicker parts than CO₂ welding, and since the heat affected zone is confined to the joint region no marking of the outer surfaces occurs. Further, precise focusing of the laser beam allow accurate joints to be formed, a non-contact process which is both clean and hygienic, they may be performed in a single-shot or continuous manner. See Page 3. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a translucent and an opaque layer in laser welding because TWI teaches high efficiency in diode transmission laser welding, no marking of the outer surfaces, precise and accurately formed joints and a clean and hygienic process that may be performed both in a single-shot or continuous manner.

Further, with respect to independent claim 20, Ovshinsky et al. disclose a battery casing having a container (the lower and side portions) having an aperture in the upper portion where the lid is provided. See Figure 1.

With respect to claims 2-3, 8-10 and 21, as discussed above, Schäfer discloses a terminal having ribs for interlocking with the plastic seal for fluid-tightness and

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mechanical strength. It would have been obvious to provide this structure to the battery of Ovshinsky et al. for fluid-tightness and mechanical strength.

With respect to claims 4 and 22, Ovshinsky et al. disclose a plurality of cells in the battery linked by the terminal connector. See Figure 1.

With respect to claims 5-6 and 23-24, as discussed above, TWI discloses laser welding uses one translucent layer and one opaque layer. See Introduction. It would have been obvious to one having ordinary skill in the art at the time of the invention to have the housing be translucent while the lid was opaque or vice versa, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

With respect to claim 7, TWI discloses that the materials to be joined require clamping during laser welding. See page 3. Therefore, a weld bead would form.

With respect to claims 12-13, TWI discloses that the materials can be joined, traditionally by a carbon black absorber in the opaque plastic. See Page 4.

With respect to claims 14-15, Schäfer discloses the plastic sealing member to have ribs for fluid-tightness and mechanical strength. The structure is clamped together in a liquid-tight manner to prevent the electrolyte from leaking out of the system. See page 1, lines 51-58 of Schäfer. It would have been obvious to one of ordinary skill in the art to have ribs on the plastic sealing member and a liquid-tight structure because Schäfer teaches preventing the electrolyte from leaking by ensuring both fluid-tightness and mechanical strength.

Response to Arguments

Applicant's arguments filed September 29, 2009 have been fully considered but they are not persuasive. Initially it is noted that arguments regarding Walsh are moot in view of the new grounds of rejection. However, Applicant argues:

a) Ovshinsky in view of Schafer do not disclose the sealing element in contact with the housing wall such that there is no open space between the sealing element and the housing wall.

The Examiner respectfully disagrees. In particular, Schafer discloses the welding neck (6) of the sealing element (5) to directly contact the welding neck (7) of the housing element (2). See Figure 1. It is the position of the Examiner that a portion of the total sealing element (5) is the welding neck (6) and, much the same, a portion of the housing element (2) is the welding neck (7), as depicted in Figure 1. Further, while there is the opening (16) and annular groove (17) forming a separation along the plane of the housing element (2) as depicted in Figure 1, there is no opening where there is contact between the housing element (2) and the sealing element (5) and thus the claim limitation is believed to be met.

b) Schafer discloses simultaneously welding.

It is the position of the Examiner that this is not excluded by transmission laser welding as taught by TWI.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Scully whose telephone number is (571)270-5267. The examiner can normally be reached on Monday to Friday 7:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571)272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. S./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795